

Finance Plan Addendum

INTRODUCTION

The National Estuary Programs (NEP), including the Galveston Bay Estuary Program (GBEP), seek funding to implement core water programs of the Environmental Protection Agency (EPA). Through Section 320 of the Clean Water Act (CWA), Congress created the NEPs in order to restore and improve water quality in the “Estuaries of National Significance.” GBEP is one of 28 NEPs that receives base program funding from the EPA to implement its Comprehensive Conservation Management Plan (CCMP). While EPA funding is one of the primary sources of revenue for its work, GBEP is required to match the EPA grant one-to-one (1:1). The primary source of matching funds comes from the State of Texas through the Texas Commission on Environmental Quality (TCEQ); however, many other sources of funding have been obtained by GBEP and its project partners. Each year GBEP reports to EPA its leveraging activities related to cash investments by state, local, and private organizations as well as its in-kind match. Federal, state, and partner contributions are critical to the success of GBEP.

There are two types of costs associated with implementation of the *Galveston Bay Plan, 2nd Edition* (*GBP, 2nd Edition*); program administration and maintaining the GBEP staff and funding for implementing the *GBP, 2nd Edition* (state and federal funds).

Anticipated cost ranges have been assigned to each activity under actions included in the *GBP, 2nd Edition* and are based on the best professional judgement of stakeholders during the framework workshops of the *GBP, 2nd Edition*. These cost ranges are meant to be estimates to account for inflation and time-specific market demand and are not intended to represent final budgetary allocations. Final cost adjustments will be established during project development and the implementation of an activity, when more detailed information can be accurately assessed. Regardless, the estimates provide some idea of the level of effort implied in the *GBP, 2nd Edition*.

Increased funding to implement the *GBP, 2nd Edition* is the goal of the Finance Plan. Success is measured by funding leveraged by GBEP and partners in implementation, reported annually through the Government Performance and Results Act (GPRA) National Estuary Program Online Reporting Tool (NEPORT).

CURRENT FUNDING AND SUPPORT

GBEP is funded annually with EPA funds from CWA Section 320, which are matched 1:1 with state funds from TCEQ. The partnership between TCEQ and EPA is critical to successful implementation of the *GBP, 2nd Edition*, since some actions fulfill the tenets of the CWA and Texas Water Code and support the missions of both agencies. The annual budget for GBEP from CWA Section 320 and TCEQ is roughly \$1.54 million per year.

Because baseline funding is subject to appropriations from the US Congress (annual) and the Texas Legislature (biennial), it is difficult to predict long-term funding allocations.

Table 1: Annual Funding Sources on Average (2000-2018)	
TCEQ	\$1,025,229
CWA Section 320	\$513,428
External Federal Grants*	\$3,049,313
External State Funding*	\$384,202
External Other Funding*	\$1,835,232
<i>Local/Corporate/Private/Gulf Environmental Benefit Fund (GEBF)</i>	
Total	\$6,807,404
<i>*Funding may be secured by a third-party partner and not administered by GBEP</i>	

To supplement funding for implementing actions, GBEP and their partners submit many federal and state grants to leverage available local funding, especially Habitat Conservation Action implementation. Additional funding secured by GBEP or partners on individual projects raises the annual budget to around \$6.8 million on average (see annual funding sources in Table 1). This number can vary on a yearly basis depending on the availability of funding and the success of applications.

Table 2: Annual Funding by Year (2000-2018)			
FY	State	CWA Section 320	Partner Contributions
2000	\$1,100,000	\$340,000	\$195,750
2001	\$1,100,000	\$330,000	\$4,001,022
2002	\$1,100,000	\$330,000	\$3,908,000
2003	\$1,100,000	\$340,000	\$6,937,747
2004	\$1,100,000	\$510,000	\$8,500,000
2005	\$1,100,000	\$506,685	\$4,200,000
2006	\$1,100,000	\$511,966	\$3,010,066
2007	\$1,100,000	\$492,600	\$6,316,284
2008	\$1,100,000	\$418,000	\$14,762,465
2009	\$1,100,000	\$591,750	\$3,315,330
2010	\$1,100,000	\$600,000	\$2,177,926
2011	\$1,100,000	\$800,000	\$12,991,434
2012	\$1,100,000	\$598,800	\$4,036,951
2013	\$919,161	\$597,333	\$2,558,324
2014	\$844,088	\$512,000	\$9,145,274
2015	\$822,613	\$538,000	\$7,301,268
2016	\$822,613	\$538,000	\$3,549,391
2017	\$846,537	\$600,000	\$2,338,000
2018	\$924,343	\$600,000	\$12,909,398

As a program administered by TCEQ, the environmental agency for the state which has both regulatory and nonregulatory functions, GBEP is prohibited from engaging in lobbying, private fundraising, or seeking funding directly from private endowments. Funding for implementation beyond CWA Section 320 and TCEQ is almost exclusively state and federal public funding secured through grant opportunities by GBEP directly, or implementation partners on a project level (see "Partner Contributions" in Table 2).

The NEP work planning/funding cycle is annual (based on funding Congress appropriates annually), with leveraging data collected annually, and performance

evaluations conducted every five years. Originally authorized in 2000 by the Estuaries and Clean Waters Act of 2000, Congress reauthorized the NEP in 2021.

Galveston Bay Plan, 2nd Edition Costs

There are two types of costs associated with implementation of the *GBP, 2nd Edition*; program administration and maintaining the GBEP staff and funding for implementing the *GBP, 2nd Edition*.

Galveston Bay Estuary Program Administration

The GBEP is administered by the TCEQ which dedicates eight Full Time Equivalents (FTE's) in the Clear Lake office. Seven FTE's are funded through the CWA Section 320 1:1 matched grant and one FTE is funded through TCEQ state funds. Numerous administrative FTE's dedicated to multiple TCEQ programs also support GBEP in roles such as grant and contract management, procurement services, and legal representation, along with facilities and fleet management. These TCEQ-dedicated FTE's allow GBEP staff to focus on *GBP, 2nd Edition* implementation and stakeholder engagement.

FTE dedication is controlled by TCEQ and the Texas Legislature, and not controlled by GBEP or partners. Funding levels do not correlate to FTE's, but staffing has been maintained at this number for 20 years regardless of changes in funding levels.

Galveston Bay Plan, 2nd Edition Implementation

As stated in the introduction, federal, state, and partner contributions are critical to the success of GBEP. Funding for implementation beyond CWA Section 320 and TCEQ state funding is almost exclusively leveraged from state and federal public funding sources secured through grant opportunities by GBEP directly, or implementation partners on a project level.

GBEP's ability to plan and leverage additional monies is what makes the program a valuable partner in the region. The GBEP staff provide technical support to its partners in developing and securing funding for a variety of project types and apply for external funding when applicable. Awards received include the Coastal Impact Assistance Program (CIAP), which was administered by the U.S. Fish and Wildlife Service (USFWS) in partnership with the Texas General Land Office (GLO), and the Gulf Environmental Benefit Fund (GEBF) administered by the National Fish and Wildlife Foundation (NFWF).

Since 2000, GBEP has leveraged an average of \$13.40 in partner and state funding for every \$1 of CWA Section 320 funding received. For every \$1 of state funding received, GBEP leveraged an average of \$5.96 in partner contributions.

Table 3: GBP Implementation Cost by Source (2000-2018)	
CWA Section 320 Baseline Funding	\$9,755,134
TCEQ Baseline Funding	\$19,479,355
Federal Funding <i>National Oceanic and Atmospheric Association (NOAA), USFWS, US Army Corps of Engineers, American Recovery and Reinvestment Act, CIAP</i>	\$53,899,943
State Funding <i>Texas Parks and Wildlife (TPWD), GLO</i>	\$7,299,831
Local Funding	\$10,643,879
Deepwater Horizon Funding <i>GEBF, Natural Resource Damage Assessment</i>	\$25,110,800
Private Funding	\$3,151,725
In-kind	\$1,226,919
Total	\$130,567,586

Funding leveraged comes from many federal, state, local, and private sources (see 18-year breakdown of GBEP sources in Table 3). These are secured largely through grants, applied for by not only GBEP, but partners committed to implementing GBP actions. Nationwide federal grants, such as the National Coastal Wetlands Conservation Grants (CWPPRA) and the North American Wetlands Conservation Grant (NAWCA) are consistent forms of funding. GBEP and partners have also been successful with temporary funding streams, such as Natural Resource Damage Assessments, CIAP, and GEBF. State and regional partners such as the USFWS Service Texas Coastal Program and the GLO Coastal Erosion Planning and Response Act (CEPRA) team and Coastal Management Program (CMP) have also been reliable funding sources.

GBEP Implementation of Plan Actions

GBEP continues to seek funds to implement the actions recommended by the *GBP, 2nd Edition* from a variety of sources to avoid creating a disproportionate financial burden on any group and to aid partners pursuing additional funds for implementation of actions wherever possible. Funding includes grants, contract operations with partners, and private and nonprofit organization sources.

Grants

GBEP typically pursues grants from major federal assistance programs administered by:

- EPA
- NOAA
- USFWS
- U.S. Department of Agriculture
- Sources related to the Deepwater Horizon Oil Spill, such as the Natural Resource Damage Assessment; Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act (referred to as the RESTORE Act); and GEBF

GBEP also passes grant funds through to organizations responsible for implementing actions or pursues grant funding on behalf of the organizations responsible for implementation activities. State and federal funding provided to GBEP from TCEQ and EPA is leveraged as match for partners in the pursuit of these funds, when applicable. For example, EPA Section 319 nonpoint source funding through the TCEQ and

Texas State Soil and Water Conservation Board (TSSWCB) annual grant programs has been successfully matched with GBEP state funding to implement local Watershed Protection Plans, such as in Double Bayou, that implement the Action Plan: Improve Water Quality Through Nonpoint Source Pollution Abatement. This demonstrates how GBEP successfully works with its partners to maximize and leverage funding sources.

Contract Operations

GBEP predominantly conducts implementation activities under interlocal and interagency contracts with other units of government and academia. Contract services for nonprofit organizations and private sector organizations may be pursued by GBEP if the identified activities are consistent with the *GBP, 2nd Edition* and qualify under federal and state law. This allows GBEP to adopt existing agency programs to accomplish the objectives identified in the *GBP, 2nd Edition*.

Private and Nonprofit Organization Sources

Funding from nonprofit organizations and foundations that support projects related to environmental conservation may be obtained by GBEP and will be pursued, when applicable. As a program administered by TCEQ, the environmental agency for the state which has both regulatory and nonregulatory functions, GBEP is prohibited from engaging in private fundraising or seeking funding directly from private endowments, but partner-led efforts implementing the *GBP, 2nd Edition* may pursue those endeavors.

Partner Implementation of Plan Actions

Many actions identified in the *GBP, 2nd Edition* will be pursued independent of fiscal support from GBEP but will be supported by GBEP and stakeholder guidance (see existing examples of actions funded externally of GBEP funding sources in Figure 1). Other actions may be completed independent of both fiscal and other support from GBEP. Partner implementation of actions may be funded through a variety of state, local, private, foundation, federal, or other funding sources. Numerous existing and proposed programs will expend funds to benefit Galveston Bay outside the annual GBEP EPA funds from CWA Section 320; therefore, these costs do not add to the cost of the *GBP, 2nd Edition*.

EXAMPLES OF EXTERNALLY FUNDED PLAN ACTIONS

GBP'18 ACTION	FUNDING SOURCE	PROJECT DESCRIPTIONS (INCLUDING FUNDING PARTNERS)
HC-1	GEBF, Deepwater Horizon, National Fish and Wildlife Foundation	TPWD and Audubon Texas received \$3 million to build and restore bird islands in Galveston Bay.
HC-2	NOAA Marine Debris Program	The Galveston Bay Foundation received funding to remove derelict and abandoned vessels and pilings. The GLO provided matching funds.
RES-4	National Academy of Sciences Gulf Research Program	The Galveston Bay Foundation received funding for "Making Monitoring Matter," a Galveston Bay volunteer water quality-monitoring program.
RES-8	Gulf of Mexico Alliance (GOMA)	Rice University SSPEED Center received funding to host the "Upper Texas Resiliency Conference" in 2010.
ACS-1; Regional Monitoring Plan	Houston Endowment	The annual <i>Galveston Bay Report Card</i> is produced by the Galveston Bay Foundation and Houston Advanced Research Center.
PEA-3	NOAA B-Wet	The Artist Boat received funding to conduct educational training for K-12 educators on watershed issues related to Galveston Bay.
SPO-3	U.S. EPA Gulf of Mexico Program	The Galveston Bay Foundation received funding for the G-BAN Mobile App and Outreach.

Figure 1: Examples of External Funding used to implement the GBP, 2nd Edition

In fact, CCMP costs are small in comparison to the total expenditures in the region on water quality improvement programs alone. These externally funded programs are an important part of the GBP, 2nd Edition's bay-wide strategy for stewardship, but are not funded through the CCMP by their separate mandates (i.e., they would occur regardless of the GBP, 2nd Edition). An important role of the GBP, 2nd Edition is in coordinating these programs through the Galveston Bay Council and subcommittees, to assure the bay's most significant problems are addressed.

FUTURE SUPPORT AND SUSTAINABILITY

Long-term resource needs include continued funding and support from both TCEQ and EPA (please see proposed actions in Table 4). Despite not being able to privately fundraise as a program of the TCEQ, GBEP has the benefit of having match directly dedicated to CWA Section 320 funds, plus additional state funding that contributes greatly to implementing actions of the GBP, 2nd Edition by serving as match to larger grants, especially for habitat restoration and acquisition. Potential implementation costs and funding sources for each action of the four plan priorities have been identified in Figure 3.

The GBEP has maintained a consistent staff level, which with supplemental administrative support from the TCEQ, can implement the GBP, 2nd Edition with funding at consistent levels. Maintaining budgets and staff are a short, medium, and long-term action in future implementation. Consistent or increased state

funding provided by TCEQ also allows GBEP and partners to leverage funding against larger federal grants that require match. These grants are necessary to complete larger projects that have an impact on Galveston Bay habitat, water quality, and living resources.

Table 4: Proposed Actions to Secure Resources
ONGOING AND SHORT TERM (0-5 YEARS)
Maintain budgets that properly support GBEP's administrative and logistical needs
Encourage partnerships with federal, state, and local entities and nongovernmental organizations
Participate in state and regional planning efforts for resiliency, monitoring and research, and conservation opportunities
Pursue funding streams established for habitat conservation and restoration (CWPPRA, NAWCA, etc.)
Pursue funding streams established for water quality improvements (Clean Water Act Section 319, Texas Water Development Board-Clean Water State Revolving Fund)
Pursue funding established through GOMESA for GBEP projects identified in the <i>Texas Coastal Resiliency Master Plan</i>
Pursue funding streams established from the Deepwater Horizon Spill (NRDA, RESTORE, GEBF)
Encourage public-private partnerships with the Gulf of Mexico Alliance's (GOMA) Gulf Star Program
MEDIUM TERM (5-10 YEARS)
Maintain budgets that properly support GBEP's administrative and logistical needs
Encourage partnerships with federal, state, and local entities and nongovernmental organizations
Continue to pursue funding streams established from the Deepwater Horizon Spill (NRDA, RESTORE)
Maintain resources and funding leveraged with public-private partnerships with GOMA's Gulf Star Program
Identify new resources and adapt for <i>GBP, 2nd Edition</i> actions
Leverage appropriate finance streams
LONG TERM (10+ YEARS)
Maintain budgets that properly support GBEP's administrative and logistical needs
Actively pursue partnerships with federal, state, and local entities and nongovernmental organizations
Continue to pursue funding streams established from the Deepwater Horizon Spill (NRDA, RESTORE) and other established federal and state resources
Continue to pursue funding opportunities for public-private partnerships with GOMA's Gulf Star Program
Pursue new resources and adapt for <i>GBP, 2nd Edition</i> actions
Leverage appropriate finance streams

GBEP and partners have been successful in using allocated funding to leverage outside dollars to implement plan actions since 1995. Historical support from federal, state, and short-term opportunistic sources (such as CIAP) for GBEP has led to the implementation of actions and projects that have resulted in regional conservation success, an engaged public and sustainability.

Table 5: Potential Grant Opportunities for GBEP and Partners
FEDERAL
<ul style="list-style-type: none"> • RESTORE (Direct Component, Comprehensive Plan Component, Spill Component) *; • USFWS (CWPPRA, NAWCA); • NOAA (Coastal and Marine Habitat Restoration, Bay Watershed and Training (B-WET));

<ul style="list-style-type: none"> • USDA-NRCS (Conservation Stewardship Program, Environmental Quality Incentives Program, Agricultural Conservation Easement Program) • EPA (Gulf of Mexico Program) *
STATE
<ul style="list-style-type: none"> • GLO (CMP, CEPRA); • TPWD (Texas Farm and Ranchlands Program, Landowner Incentive Program, Section 6 Grants, Recreation Grants) • TCEQ/TSSWCB (Clean Water Act Section 319 Nonpoint Source) *
LOCAL
<ul style="list-style-type: none"> • City and County Disaster Assistance Funds *
PRIVATE/CORPORATE/FOUNDATION*
<ul style="list-style-type: none"> • NFWF, Cynthia and George Mitchell Foundation, Brown Foundation, Houston Endowment, CITGO-Caring for Our Coast, ExxonMobil, ConocoPhillips
<i>*Funding stream must be pursued by partners in implementation</i>

GBEP and partners will continue to collaborate on federal and state grants, identify and apply for new grant opportunities (see potential sources of funding in Table 5), and pursue larger temporary funding sources related to the Deepwater Horizon Spill (RESTORE Act, NRDA, GEBF) that the region will continue to receive over the next 10 years of *GBP, 2nd Edition* implementation, along with the Gulf of Mexico Energy Security Act (GOMESA) funding administered by the GLO.

PRIORITIES FOR FUNDING

The GBP'95 contained 82 actions designed to be implemented by a staff of 20 and exponentially higher funding levels. In addition, multiple factors including development, population, and regulatory controls drastically changed in this time period. Many actions identified in GBP'95 were successfully implemented and new issues emerged, and other actions were out-of-date or did not reflect the best solutions that are now available.

During the development of the *GBP, 2nd Edition*, GBEP had stakeholder prioritize, modify, or eliminate many action items to develop a plan in which implementation was specific, measurable, realistic, achievable, and time-bound given conservation needs, funding levels, workload, and existing political climate within the watershed.

The *GBP, 2nd Edition* contains 38 (instead of 82) actions identified for implementation. To further prioritize, the *GBP, 2nd Edition* also identifies "Timeframes and Outputs" for each action, which includes discrete timelines for implementation targets at the two-to-five-year, five-year, and 10-year time periods (see HC-1 (Land Acquisition) Action from the *GBP, 2nd Edition* in Figure 2). This timeline will guide the order of implementation.

ACTIVITIES	TIMEFRAME AND OUTPUT(S)	IMPLEMENTATION COST
Active CAP initiatives in each sub-bay watershed of Galveston Bay	Within 2-5 years, create and maintain list of acquisition projects to submit for funding.	\$0 - \$200,000
Adapt acquisition projects for submission to multiple funding opportunities.	Within 5-10 years, develop conservation initiative white papers for targeted sub-bay watersheds.	\$200,000 - \$1 Million
	Within 5-10 years, continue the GBEP programmatic support for the CAP in the watershed.	\$200,000 - \$1 Million
	Within 5-10 years, develop grant proposals and funding strategies for acquisition projects.	\$200,000 - \$1 Million
	Within 10-plus years, place 5,000 acres of important coastal habitat under long-term conservation through fee-simple acquisition, conservation easements, and other mechanisms.	\$5 Million - \$50 Million

Figure 2: Land Acquisition Action Plan (HC-1)

GBEP Subcommittees annually identify priorities for funding based on the *GBP, 2nd Edition* actions before each project planning cycle based on status, emerging issues, relevant funding stream identification and availability, and/or needs in the region for annual Work Plan development. This helps to prioritize short-term based on available funding.

GBEP recognizes that successful implementation of the actions identified in the *GBP, 2nd Edition* are subject to potential changes in national funding levels, environmental and weather-related factors, the national economic climate, and other variables beyond its control.

GBEP also recognizes that changes to the Objectives, Priority Issues, and Activities can be influenced by revisions to national EPA guidance. Subsequently, GBEP, in coordination with the Galveston Bay Council and its subcommittees, may choose to re-evaluate and update Work Plans generated through the *GBP, 2nd Edition* to adjust for such changing factors. This adaptive management approach enables GBEP to make appropriate modifications. More information about the Adaptive Management Approach is presented in the Regional Monitoring Plan section of the *GBP, 2nd Edition*.

Figure 3: Implementation Costs and Funding Sources in the Galveston Bay Watershed

Ensure Safe Human and Aquatic Life Use

Action Item	Activities	Timeframe and Output(s)	Implementation Cost	Funding Source(s)
NPS-1 Support Watershed-Based Plan Development and Implementation	Identify target project areas and support development and implementation of 10 WBPs.	Within 2-5 years, support development and / or implementation of two WBPs (20% of goals met).	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, TCEQ TMDL, TSSWCB, USEPA, H-GAC, HARC
		Within 5-10 years, support development and / or implementation of three additional (five total) WBPs (50% of goals met).	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, TCEQ TMDL, TSSWCB, USEPA, H-GAC, HARC
		Within 10-plus years, support development and / or implementation of five additional (10 total) WBPs (100% of goals met).	\$1 Million - \$50 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, TCEQ TMDL, TSSWCB, USEPA, H-GAC, HARC
NPS-2 Support Nonpoint Source Education and Outreach Campaigns	Work with PPE subcommittee and partners to coordinate and facilitate ongoing NPS education and outreach through existing campaigns, such as Back the Bay.	Within 2-5 years, conduct initial assessment of target population.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, H-GAC, GBF
	Continue NPS education and outreach and engage target populations.	Within 2-5 years, initiate target area NPS education campaign.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, H-GAC, GBF
		Within 5-10 years, track number of individuals involved, target populations, or groups engaged.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, H-GAC, GBF

Action Item	Activities	Timeframe and Output(s)	Implementation Cost	Funding Source(s)
	Successfully engage target populations and track results.	Within 10-years, track changes in public perception through follow-up evaluation/questionnaire. In addition, track changes in behavior and in environmental parameters (i.e., water quality, SSO events, etc. based on program focus).	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, H-GAC, GBF
NPS-3 Implement NPS Best Management Practices	Develop and install five BMP projects.	Within 2-5 years, initiate two BMP projects.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, Texas A&M AgriLife (AgriLife), H-GAC, Houston Parks and Recreation Department (HPRD), Houston Parks Board (HPB), Bayou Preservation Association (BPA)
		Within 5-10 years, initiate three additional BMP projects (five total).	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, AgriLife, H-GAC, HPRD, HPB, BPA
		Within 10-plus years, complete five BMP projects.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, AgriLife, H-GAC, HPRD, HPB, BPA
	Complete effectiveness monitoring and share results with partners, including possible data evaluations, white papers, and project mapping.	Within 10-plus years, evaluate project results and develop white paper on findings.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, TCEQ, H-GAC, HARC
NPS-4 Host Nonpoint Source Workshops	Understand current awareness of BMPs by conducting pre-workshop assessments.	Within 2-5 years, conduct BMP awareness level assessments prior to hosting workshops.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, AgriLife, H-GAC, GBF
	Conduct 10 BMP workshops to enhance	Within 2-5 years, conduct one BMP education workshop per year.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, AgriLife, H-GAC, GBF

Action Item	Activities	Timeframe and Output(s)	Implementation Cost	Funding Source(s)
	technical understanding and awareness.	Within 5-10 years, conduct one BMP education workshop per year.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, AgriLife, H-GAC, GBF
		Within 10-plus years, conduct one BMP education workshop per year.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, AgriLife, H-GAC, GBF
	Measure impact of workshops by conducting BMPs post-workshop assessments.	Within 10-plus years, conduct BMP awareness level assessments after hosting workshops.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, AgriLife, H-GAC, GBF
PS-1 Support Stormwater Education Programs	Increase collaboration between MS4 programs across the region.	Within 2-5 years, develop database to track existing MS4 programs and identify opportunities for collaboration.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, TCEQ, H-GAC, HARC
	Work with PPE subcommittee and partners to coordinate and facilitate stormwater outreach efforts.	Within 2-5 years, coordinate with PPE to promote or host workshops and regional messaging campaigns to support point source education efforts.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Finalize stormwater outreach plan and begin implementation activities, such as hosting or promoting workshops and promoting regional messaging.	Within 5-10 years, continue to coordinate with PPE on stormwater outreach efforts.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Complete stormwater outreach plan implementation activities.	Within 10-plus years, continue to coordinate with PPE on stormwater outreach efforts and host identified workshops.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration

Action Item	Activities	Timeframe and Output(s)	Implementation Cost	Funding Source(s)
	Complete effectiveness monitoring and share results with partners, including possible data evaluations, white papers, and project mapping.	Within 10-plus years, track success of workshops by identifying the number of MS4s implementing BMPs.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, TCEQ, H-GAC, HARC
PS-2 Achieve Sanitary Sewer System Capacity and Integrity	Work with partners to improve or replace failing sanitary sewer systems in project area.	Within 2-5 years, identify and prioritize list of geographies with chronically failing sanitary sewer systems in need of repair, improvement, or replacement.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, TCEQ, TMDL, H-GAC
		Within 5-10 years, support or host technical workshops (number to be determined) for targeted geographies.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, TCEQ, TMDL, H-GAC
	Host or support regular sanitary sewer systems workshops.	Within 5-10 years, track number of workshops supported or hosted and number of attendees.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, TCEQ, TMDL, H-GAC
	Track the number of TMDL / I-Plans in the project area.	Within 10-plus years, track number of TMDL / I-Plans initiated or completed in targeted geography.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, TCEQ, TMDL, H-GAC
	Demonstrate the effectiveness of sanitary sewer systems and efforts to repair, improve, or replace failing sanitary sewer systems.	Within 10-plus years, pull sanitary sewer overflow data for targeted geographies to determine whether a reduction occurred.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, TCEQ, TMDL, H-GAC
PS-3 Increase Wastewater Treatment	Create a toolbox to provide support to chronically failing WWTFs.	Within 2-5 years, identify chronically failing WWTFs and evaluate factors leading	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, TCEQ, TMDL, H-GAC

Action Item	Activities	Timeframe and Output(s)	Implementation Cost	Funding Source(s)
Facility Compliance		to noncompliance; create compliance toolbox.		
	Promote toolbox to provide support to chronically failing WWTFs.	Within 5-10 years, use compliance tool box to work with chronically failing facilities, communicating through technical workshops and non-regulatory and regulatory visits (number to be determined {TBD}).	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, TCEQ, TMDL, H-GAC
	Track the success of support provided to chronically failing WWTFs.	Within 10-plus years, pull failure data for identified WWTFs to determine compliance tool box success.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, TCEQ, TMDL, H-GAC
PHA-1 Improve Seafood Advisory Awareness	Work with PPE subcommittee to develop a Seafood Advisory Awareness Outreach Plan.	Within 2-5 years, develop Seafood Advisory Awareness Outreach Plan. Identify specific goals for increasing awareness (goals TBD).	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Finalize Seafood Advisory Awareness Outreach Plan and begin implementation.	Within 5-10 years, see significant progress on Outreach Plan goals (50% of goals met).	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
		Within 10-plus years, see significant progress on Outreach Plan goals (100% of goals met).	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Successfully implement Seafood Advisory Awareness Outreach Plan and track results.	Within 10-plus years, assess effectiveness of Outreach Plan by tracking number of groups and individuals reached.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration

Action Item	Activities	Timeframe and Output(s)	Implementation Cost	Funding Source(s)
PHA-2 Improve Regional Contact Recreation Risk Awareness	Work with PPE subcommittee to develop a Contact Recreation Outreach Plan.	Within 2-5 years, develop Contact Recreation Outreach Plan. Identify specific goals for increasing awareness (goals TBD).	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Finalize Contact Recreation Outreach Plan and begin implementation.	Within 5-10 years, significant progress on Outreach Plan goals (50% of goals met).	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
		Within 10-plus years, significant progress on Outreach Plan goals (100% of goals met).	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Successfully implement Contact Recreation Outreach Plan and track results.	Within 10-plus years, assess effectiveness of Outreach Plan by tracking number of groups and individuals reached.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
PHA-3 Improve Contact Recreation Safety Through Watershed-Based Plans (WBPs)	Support the implementation of ongoing WBPs and development of 3-4 new WBPs.	Within 2-5 years, support and facilitate the implementation of current and development of one to two new WBPs.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, TCEQ TMDL, TSSWCB, USEPA, H-GAC, HARC
		Within 5-10 years, support and facilitate the implementation of current and development of an additional two WBPs.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, TCEQ TMDL, TSSWCB, USEPA, H-GAC, HARC
	Successfully develop 3-4 WBPs and track results.	Within 10-plus years, assess impact of supported WBPs by tracking the number of BMPs implemented and number of improved assessment units.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, TCEQ, H-GAC, HARC
PHA-4 Improve Shellfish	Demonstrate a change in shoreline bacteria concentrations.	Within 2-5 years, support implementation of the Upper Texas Coast Oyster	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, TCEQ TMDL, USEPA, H-GAC, DSHS

Action Item	Activities	Timeframe and Output(s)	Implementation Cost	Funding Source(s)
Consumption Safety Through WBPs		Waters TMDL / I-Plan and report on status.		
		Within 5-10 years, continue to support implementation of the Upper Texas Coast Oyster Waters TMDL / I-Plan and report on status.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, TCEQ TMDL, USEPA, H-GAC, DSHS
		Within 10-plus years, review water quality data to determine whether a decrease in bacteria concentrations occurred.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
PHA-5 Improve Finfish Consumption Safety Through WBPs	Support the implementation of current and / or development of 3-4 new WBPs.	Within 2-5 years, support and facilitate the development of one to two WBPs.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, TCEQ TMDL, TSSWCB, USEPA, H-GAC, HARC
		Within 5-10 years, support and facilitate the development of an additional two WBPs.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, TCEQ TMDL, TSSWCB, USEPA, H-GAC, HARC
	Complete impact assessment and results tracking of the 3-4 developed WBPs.	Within 10-plus years, assess impact of supported WBPs by tracking the number of BMPs implemented and number of improved assessment units.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration

Protect and Sustain Living Resources

Action Item	Activities	Timeframe and Output(s)	Implementation Cost	Funding Source(s)
HC-1 Land Acquisition	Active CAP initiatives in each sub-bay watershed of Galveston Bay	Within 2-5 years, create and maintain list of acquisition projects to submit for funding.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Adapt acquisition projects for submission to multiple funding opportunities.	Within 5-10 years, develop conservation initiative white papers for targeted sub-bay watersheds.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
		Within 5-10 years, continue the GBEP programmatic support for the CAP in the watershed.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
		Within 5-10 years, develop grant proposals and funding strategies for acquisition projects.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
		Within 10-plus years, place 5,000 acres of important coastal habitat under long-term conservation through fee-simple acquisition, conservation easements, and other mechanisms.	\$5 Million - \$50 Million	CWA Section 320, TCEQ State Funding, in-kind staff time from partners in collaboration, GEBF, NRDA, RESTORE (Direct Component, Comprehensive Plan Component, Spill Component), USFWS (CWWPRA, NAWCA), NOAA (Coastal and Marine Habitat Restoration), USDA-NRCS (Agricultural Conservation Easement Program), GLO (CMP, GOMESA), TPWD (Texas Farm and Ranch Lands Program, Section 6 Grants), Private/Corporate/Foundation (NFWF, Cynthia and George Mitchell Foundation, Brown Foundation)
HC-2 Habitat Restoration	Active restoration plan in each sub-bay watershed of Galveston Bay.	Within 2-5 years, identify coastal areas to target for restoration of lost or degraded coastal habitats, using 1950s aerial imagery as a benchmark.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Adapt restoration projects for submission to multiple funding opportunities.	Within 5-10 years, develop funding strategies for restoration projects that can be adapted to multiple funding sources.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration

Action Item	Activities	Timeframe and Output(s)	Implementation Cost	Funding Source(s)
		Within 10-plus years, restore 2,500 acres of lost or degraded coastal habitats.	\$5 Million – \$50 Million	CWA Section 320, TCEQ State Funding, in-kind staff time from partners in collaboration, GEBF, NRDA, RESTORE (Direct Component, Comprehensive Plan Component, Spill Component), USFWS (CWWPRA, NAWCA, NMBCA, Coastal Program), NOAA (Coastal and Marine Habitat Restoration), USDA-NRCS (Conservation Stewardship Program, Environmental Quality Incentives Program), GLO (CMP, CEPRA, GOMESA), TPWD (Recreation Grants), Private/Corporate/Foundation (NFWF, Cynthia and George Mitchell Foundation, Brown Foundation, Houston Endowment, CITGO-Caring for Our Coast, ExxonMobil, ConocoPhillips)
HC-3 Habitat Enhancement	Active enhancement plan in each sub-bay watershed of Galveston Bay.	Within 2-5 years, identify important coastal areas to target for enhancement of degraded coastal habitats.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Adapt enhancement projects for submission to multiple funding opportunities.	Within 5-10 years, develop funding strategies for enhancement projects that can be adapted to multiple funding sources.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
		Within 10-plus years, enhance 5,000 acres of lost or degraded coastal habitats.	\$1 Million - \$10 Million	CWA Section 320, TCEQ State Funding, in-kind staff time from partners in collaboration, GEBF, NRDA, RESTORE (Direct Component, Comprehensive Plan Component, Spill Component), USFWS (CWWPRA, NAWCA, NMBCA, Coastal Program), NOAA (Coastal and Marine Habitat Restoration), USDA-NRCS (Conservation Stewardship Program, Environmental Quality Incentives Program), GLO (CMP, CEPRA, GOMESA), TPWD (Recreation Grants), Private/Corporate/Foundation (NFWF, Cynthia and George Mitchell Foundation, Brown Foundation, Houston Endowment, CITGO-Caring for Our Coast, ExxonMobil, ConocoPhillips)
SC-1 Native Species Management*	Support native species conservation projects	Within 2-5 years, develop habitat conservation projects based on species needs.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration

Action Item	Activities	Timeframe and Output(s)	Implementation Cost	Funding Source(s)
	on public and private lands.	Within 5-10 years, continue to develop habitat conservation projects based on species needs.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
		Within 10-plus years, continue to develop habitat conservation projects based on species needs.	\$200,000 - \$1 Million	<i>Please see HC-1, HC-2, and HC-3</i>
SC-2 Invasive Species Management*	Support invasive species management on public and private lands.	Within 2-5 years, identify important coastal areas to target for enhancement of degraded coastal habitats.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
		Within 5-10 years, develop funding strategies for enhancement projects that can be adapted to multiple funding sources.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
		Within 10-plus years, enhance 5,000 acres of lost or degraded coastal habitats (please see HC-3).	\$1 Million - \$500 Million	<i>Please see HC-2 and HC-3</i>
FWI-1 Regional Planning for Freshwater Inflows	Develop partnerships to inform public of opportunities to comment on regional water planning.	Within 2-5 years, identify opportunities to participate in the regional water planning processes to ensure the rules that govern the regional water plans better protect water for wildlife (specific goals to be determined, could include increasing the number of partners each year).	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
		Within 5-10 years, work with partners to create a plan and materials to address key issues.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
		Within 10-plus years, see completion of plan items to address key issues.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
FWI-2 Freshwater	Support research to understand the annual	Within 2-5 years, present at the State of the Bay Symposia.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration

Action Item	Activities	Timeframe and Output(s)	Implementation Cost	Funding Source(s)
Inflows Research and Management	and seasonal freshwater inflow needs for Galveston Bay, as well as information needed to develop management strategies.	Within 2-5 years, collect data and share results and partner publications on the GBEP website.	\$200,000 - \$ 1 million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
		Within 2-5 years, provide support on the development and public delivery of white papers, technical presentations, and workshops (number TBD).	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
		On a cycle of every 5-10 years, use research data to contribute to the State of the Bay Report.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
FWI-3 Water Conservation and Education	Develop or support outreach initiatives that promote water conservation and educate the public on the value and importance of freshwater inflows.	Within 2-5 years, create regional initiatives plan that supports water conservation and the value of freshwater inflows (specific goals to be determined, could include increasing the number of partners each year).	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
		Within 5-10 years, see significant progress on regional initiatives plan items (50% of goals met).	\$200,000 - \$1 million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
		Within 10-plus years, see completion of all regional initiatives plan items (100% of goals met).	\$200,000 - \$ 1 million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration

Engage Communities

Action Item	Activities	Timeframe and Output(s)	Implementation Cost	Funding Source(s)
SPO-1 Stewardship Programs and Volunteer Opportunities	Develop list of existing stewardship and volunteer programs.	Within 2-5 years, develop database of existing programs.	\$0 - \$200,000	In-kind staff time from partners in collaboration with GBF, H-GAC, HARC, Harris County Department of Education (HCDE), Artist Boat, Citizen's Environmental Coalition (CEC), Audubon Texas
	Identify new or underserved geographies and communities in need of stewardship or volunteer programs.	Within 2-5 years, identify new geographies and communities.	\$0 - \$200,000	In-kind staff time from partners in collaboration with GBF, H-GAC, HARC, HCDE, Artist Boat, CEC
	Create stewardship plan to provide stewardship and volunteer activities to underserved geographies and communities.	Within 2-5 years, create stewardship plan to support existing (or create) 10 programs.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration with GBF, H-GAC, HARC, HCDE, Artist Boat, CEC, Audubon Texas
	Support and fund existing and new stewardship and volunteer programs.	Within 5-10 years, see a measurable increase in existing program participation (specific to programs already supported, such as Texas Stream Team and Trash Bash).	\$0 - \$200,000	CWA Section 320, TCEQ state funding
		Within 5-10 years, support five additional programs (or 50% goal met), per the stewardship plan.	\$200,000 - \$1 Million	
		Within 10-plus years, support five additional programs (or 100% goal met), per the stewardship plan.	\$200,000 - \$1 Million	
SPO-2 Workshops and Events	Continue the regular State of the Bay Symposia to ensure key target audiences are reached.	Within 3 years, host symposia. Complete events database.	\$0 - \$200,000	CWA Section 320, TCEQ state funding
		Within 5-10 years, continue to host symposia.	\$0 - \$200,000	
		Within 10-plus years, continue to host symposia.	\$0 - \$200,000	

Action Item	Activities	Timeframe and Output(s)	Implementation Cost	Funding Source(s)
	Identify new opportunities for GBEP and partners to host workshops and events for stakeholders.	Within 2-5 years, identify underserved geographies and culturally diverse communities.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration with GBF, H-GAC, HARC, HCDE, Artist Boat, CEC, Audubon Texas
		Within 2-5 years, create a workshop and events action plan (specific number of events to be determined).	\$0 - \$200,000	
		Within 2-5 years, develop and promote a list of topical speakers, spanning all subject areas.	\$0 - \$200,000	
		Within 5-10 years, see significant progress on workshop and events plan items (50% of goals met).	\$0 - \$200,000	
		Within 10-plus years, complete all workshop and events plan items (100% of goals met).	\$0 - \$200,000	
	Support existing stakeholder activities and events in "off years."	Within 2-5 years, sponsor or assist in planning three stakeholder activities or events in years between symposia.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration with GBF, H-GAC, HARC, HCDE, Artist Boat, CEC, Audubon Texas
		Within 5-10 years, continue to sponsor or assist in planning two stakeholder activities or events in years between symposia.	\$0 - \$200,000	
		Within 10-plus years, continue to sponsor or assist in planning two stakeholder activities or events in years between symposia.	\$0 - \$200,000	
SPO-3 Support Regional Initiatives	Initial discussion of goals for Back the Bay, including expanded geographies and culturally diverse and underserved communities.	Within 2-5 years, create regional initiatives plan (specific goals to be determined, could include increasing the number of partners each year).	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration with GBF, H-GAC, HARC, HCDE, Artist Boat, CEC
	Identify and support other regional campaigns, such as Cease the Grease and GBAN.			

Action Item	Activities	Timeframe and Output(s)	Implementation Cost	Funding Source(s)
	Create new material resources and language translations, where needed.			
	Annual discussion of goals for Back the Bay.	Within 5-10 years, see significant progress on regional initiatives plan items (50% of goals met).	\$200,000 - \$1 Million	In-kind staff time from partners in collaboration with GBF, H-GAC, HARC, HCDE, Artist Boat, CEC
		Within 10-plus years, see completion of all regional initiatives plan items (100% of goals met).	\$200,000 - \$1 Million	
SPO-4 Local Government Outreach	Develop list of existing resource materials for local governments.	Within 2-5 years, develop a database of existing resources.	\$0 - \$200,000	In-kind staff time from partners in collaboration with GBF, H-GAC, HARC, HCDE, Artist Boat, CEC, Audubon Texas
	Update existing resource materials list.	Within 5-10 years, update the database with new or updated resources.	\$0 - \$200,000	In-kind staff time from partners in collaboration with GBF, H-GAC, HARC, HCDE, Artist Boat, Audubon Texas
		Within 10-plus years, continue to update database with new or updated resources.	\$0 - \$200,000	
	Identify and address resource gaps / needs and target geographies and municipalities in need of resource materials.	Within 2-5 years, create plan to address key issues (specific resources to be determined based on gap analysis).	\$0 - \$200,000	In-kind staff time from partners in collaboration with GBF, H-GAC, HARC, HCDE, Artist Boat, Citizen's Environmental Coalition, Audubon Texas
	Create new materials where needed.	Within 2-5 years, work with partners to create new materials identified in plan to address key issues.	\$0 - \$200,000	CWA Section 320, TCEQ state funding
	Distribute existing and new materials to targeted geographies and municipalities.	Within 5-10 years, see significant progress on action plan items to address key issues (50% of goals met).	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration with GBF, H-GAC, HARC, HCDE, Artist Boat, CEC, Audubon Texas
		Within 10-plus years, see completion of all action plan items to address key issues (100% of goals met).	\$200,000 - \$1 Million	
PEA-1 Key Issue Engagement	Capture list of existing awareness and education programs in the region.	Within 2-5 years, develop database of existing programs.	\$0 - \$200,000	In-kind staff time from partners in collaboration with GBF, H-GAC, HARC, HCDE, Artist Boat, CEC

Action Item	Activities	Timeframe and Output(s)	Implementation Cost	Funding Source(s)
	Conduct gap analysis, to include public awareness and perception assessments to identify audiences and geographies needing additional education and awareness programs.	Within 2-5 years, conduct awareness level assessments prior to program expansion.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration with GBF, H-GAC, HARC, HCDE, Artist Boat, CEC
		Within 2-5 years, identify new geographies and communities from assessments.	\$0 - \$200,000	
PEA-2 Adult Education	Create plan of action to provide education and awareness programs to underserved geographies and communities. Explore additional topic needs, such as emerging pollutants.	Within 2-5 years, create plan to engage the public (specific goals to be determined based on gap analysis). Coordinate with other groups conducting similar research / assessment.	\$0 - \$200,000	In-kind staff time from partners in collaboration with GBF, H-GAC, HARC, HCDE, Artist Boat, CEC
		Within 5-10 years, see significant progress on items outlined in plan to engage the public (50% of goals met).	\$0 - \$200,000	
		Within 10-plus years, see completion of all items outlined in plan to engage the public (100% of goals met).	\$200,000 - \$1 Million	
	Support and fund existing and new education and awareness programs.	Within 10-plus years, conduct awareness level assessment after program expansion.	\$0 - \$200,000	CWA Section 320, TCEQ state funding
	Create new material resources and language translations, where needed.	Within 5-10 years, create new materials identified in plan to engage the public.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration with GBF, H-GAC, HARC, HCDE, Artist Boat, CEC
		Within 10-plus years, create any additional new materials, as needed.	\$0 - \$200,000	
PEA-3 K-12 Education Efforts	Capture list of existing K-12 programs in the region.	Within 2-5 years, develop a database of existing programs.	\$0 - \$200,000	In-kind staff time from partners in collaboration with GBF, H-GAC, HARC, HCDE, Artist Boat, CEC, Audubon Texas
	Conduct gap analysis to identify K-12 program needs.	Within 2-5 years, conduct an educators summit to identify education gaps and needs.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding

Action Item	Activities	Timeframe and Output(s)	Implementation Cost	Funding Source(s)
	Convene thought leaders in region to create plan of action to support K-12 programs.	Within 2-5 years, create a plan to support K-12 educators (specific goals to be determined in Educators Summit).	\$0 - \$200,000	In-kind staff time from partners in collaboration with GBF, H-GAC, HARC, HCDE, Artist Boat, CEC
	Support and fund existing and new K-12 programs.	Within 5-10 years, see significant progress on plan to support K-12 educators (50% of goals met).	\$0 - \$200,000	CWA Section 320, TCEQ state funding
	Support existing and build new relationships with Independent School Districts, Professional Educator Groups, Resource Developers, etc.	Within 10-plus years, see completion of the plan to support K-12 educators (100% of goals met).	\$200,000 - \$1 Million	In-kind staff time from partners in collaboration with GBF, H-GAC, HARC, HCDE, Artist Boat, CEC, Audubon Texas

Inform Science-Based Decision Making

Action Item	Activities	Timeframe and Output(s)	Implementation Cost	Funding Source(s)
RES-1 Conduct Biological Stressor Monitoring and Research	Present biological stressor research results at the State of the Bay Symposia.	Within 2-5 years, host a State of the Bay Symposium.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Collect data and share biological stressor research results and partner publications through GBEP website.	Within 2-5 years, collect data and share results through GBEP website.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, GLO, TPWD, National Wildlife Federation, National Science Foundation, Texas Sea Grant, Restore America's Estuaries, Houston Zoo, Texas Comptroller Natural Resources Program, U.S. Fish and Wildlife Service, Private/Corporate/Foundation (e.g., McDaniel Charitable Foundation, Gulf Coast Prairie Landscape Conservation Cooperative, SeaWorld & Busch Gardens Conservation Fund, The Trull Foundation)
	Support the development and public delivery of biological stressor research.	Within 2-5 years, provide support on the development and public delivery of white papers, technical presentations, and workshops (number TBD).	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, GLO, TPWD, National Wildlife Federation, National Science Foundation, Texas Sea Grant, Restore America's Estuaries, Houston Zoo, Texas Comptroller Natural Resources Program, U.S. Fish and Wildlife Service, Private/Corporate/Foundation (e.g., McDaniel Charitable Foundation, Gulf Coast Prairie Landscape Conservation Cooperative, SeaWorld & Busch Gardens Conservation Fund, The Trull Foundation)
	Incorporate biological stressor research results into the State of the Bay Report.	On a cycle of every 5-10 years, use research data to create the State of the Bay Report.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
RES-2 Conduct Geochemical	Present geochemical stressor research results at the State of the Bay Symposia.	Within 2-5 years, host a State of the Bay Symposium.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration

Action Item	Activities	Timeframe and Output(s)	Implementation Cost	Funding Source(s)
Stressor Monitoring and Research	Collect geochemical stressor research data and share results and partner publications through GBEP website.	Within 2-5 years, collect data and share results through GBEP website.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, National Science Foundation, USEPA, U.S. Department of Energy, Private/Corporate/Foundation (e.g., Gordon and Betty Moore Foundation, Simons Foundation)
	Support the development and public delivery of geochemical stressor research.	Within 2-5 years, provide support on the development and public delivery of white papers, technical presentations, and workshops (number TBD).	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, National Science Foundation, USEPA, U.S. Department of Energy, Private/Corporate/Foundation (e.g., Gordon and Betty Moore Foundation, Simons Foundation)
	Incorporate geochemical stressor research results into the State of the Bay Report.	On a cycle of every 5-10 years, use research data to create the State of the Bay Report.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
RES-3 Conduct Physical Stressor Monitoring and Research	Present physical stressor research results at the State of the Bay Symposia.	Within 2-5 years, host a State of the Bay Symposium.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Collect physical stressor research data and share results and partner publications through GBEP website.	Within 2-5 years, collect data and share results through GBEP website.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, GLO, TWDB, National Wildlife Federation, National Science Foundation, Harris County Flood Control District, NOAA, Private/Corporate/Foundation (e.g., Houston Endowment)
	Support the development and public delivery of physical stressor research.	Within 2-5 years, provide support on the development and public delivery of white papers, technical presentations, and workshops (number TBD).	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, GLO, TWDB, National Wildlife Federation, National Science Foundation, Harris County Flood Control District, NOAA, Private/Corporate/Foundation (e.g., Houston Endowment)
	Incorporate physical stressor research results into the State of the Bay Report.	On a cycle of every 5-10 years, use research data to create the State of the Bay Report.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration

Action Item	Activities	Timeframe and Output(s)	Implementation Cost	Funding Source(s)
RES-4 Conduct Monitoring and Research to Address Limits to Contact Recreation	Present contact recreation research results at the State of the Bay Symposia.	Within 2-5 years, host a State of the Bay Symposium.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Collect contact recreation research data and share results and partner publications through GBEP website.	Within 2-5 years, collect data and share results through GBEP website.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, TCEQ TMDL, TSSWCB, GLO, USEPA
	Support the development and public delivery of contact recreation research.	Within 2-5 years, provide support on the development and public delivery of white papers, technical presentations, and workshops (number TBD).	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, TCEQ TMDL, TSSWCB, GLO, USEPA
	Incorporate contact recreation research results into the State of the Bay Report.	On a cycle of every 5-10 years, use research data to create the State of the Bay Report.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
RES-5 Monitoring and Research to Address Limits to Seafood Consumption	Present seafood consumption limitation research results at the State of the Bay Symposia.	Within 2-5 years, host a State of the Bay Symposium.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Collect seafood consumption research data and share results and partner publications through GBEP website.	Within 2-5 years, collect data and share results through GBEP website.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, National Science Foundation, TPWD, Texas Sea Grant, NOAA, USDA
	Support the development and public delivery of seafood consumption research.	Within 2-5 years, provide support on the development and public delivery of white papers, technical presentations, and workshops (number TBD).	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, National Science Foundation, TPWD, Texas Sea Grant, NOAA, USDA
	Incorporate seafood consumption research results into the State of the Bay Report.	On a cycle of every 5-10 years, use research data to create the State of the Bay Report.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration

Action Item	Activities	Timeframe and Output(s)	Implementation Cost	Funding Source(s)
RES-6 Evaluate Best Management Practice Projects	Present BMP project results at the State of the Bay Symposia.	Within 2-5 years, host a State of the Bay Symposium.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Collect data and share present BMP project results and partner publications through GBEP website.	Within 2-5 years, collect data and share results through GBEP website.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, GLO, NOAA, Texas Sea Grant, TSSWCB, TPWD, USEPA
	Support the development and public delivery of BMP project research.	Within 2-5 years, provide support on the development and public delivery of white papers, technical presentations, and workshops (number TBD).	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, GLO, NOAA, Texas Sea Grant, TSSWCB, TPWD, USEPA
	Incorporate BMP project results into the State of the Bay Report.	On a cycle of every 5-10 years, use research data to create the State of the Bay Report.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
RES-7 Evaluate Ecosystem Services and Determine Economic Valuation	Present ecosystem services and economic valuation results at the State of the Bay Symposia.	Within 2-5 years, host a State of the Bay Symposium.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Collect ecosystem services and economic valuation data and share results and partner publications through GBEP website.	Within 2-5 years, collect data and share results through GBEP website.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, Restore America's Estuaries, Private/Corporate/Foundation (e.g., Houston Endowment, Houston Wilderness, McGovern Foundation, Powell Foundation, The Conservation Fund, The Nature Conservancy)
	Support the development and public delivery of ecosystem services and economic valuation research.	Within 2-5 years, provide support on the development and public delivery of white papers, technical presentations, and workshops (number TBD).	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, Restore America's Estuaries, Private/Corporate/Foundation (e.g., Houston Endowment, Houston Wilderness, McGovern Foundation, Powell Foundation, The Conservation Fund, The Nature Conservancy)
	Incorporate ecosystem services and economic valuation results into the State of the Bay Report.	On a cycle of every 5-10 years, use research data to create the State of the Bay Report.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration

Action Item	Activities	Timeframe and Output(s)	Implementation Cost	Funding Source(s)
RES-8 Complete Coastal Resiliency and Acclimation Studies	Present coastal resiliency research results at the State of the Bay Symposia.	Within 2-5 years, host a State of the Bay Symposium.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Collect coastal resiliency research data and share results and partner publications through GBEP website.	Within 2-5 years, collect data and share results through GBEP website.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, NOAA, National Fish and Wildlife Foundation, GLO, U.S. Army Corps of Engineers, U.S. Department of Energy, U.S. Department of Defense, National Science Foundation, Industry (e.g., Shell, ExxonMobil), Private/Corporate/Foundation (e.g., JPB Foundation, The Cynthia and George Mitchell Foundation)
	Support the development and public delivery of coastal resiliency research.	Within 2-5 years, provide support on the development and public delivery of white papers, technical presentations, and workshops (number TBD).	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, NOAA, National Fish and Wildlife Foundation, GLO, U.S. Army Corps of Engineers, U.S. Department of Energy, U.S. Department of Defense, National Science Foundation, Industry (e.g., Shell, ExxonMobil), Private/Corporate/Foundation (e.g., JPB Foundation, The Cynthia and George Mitchell Foundation)
	Incorporate coastal resiliency research results into the State of the Bay Report.	On a cycle of every 5-10 years, use research data to create the State of the Bay Report.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
ACS-1 Track Ecosystem Health Indicators	Support and promote the Galveston Bay Regional Monitoring Database (formerly called Status and Trends).	Within 2-5 years, update the Galveston Bay Regional Monitoring Database, post data to the website.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Support regional monitoring and data reporting efforts.	Within 2-5 years, support continuation of the annual Galveston Bay Report Card.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration, Private/Corporate/Foundation (e.g., Houston Endowment)
	Create the State of the Bay Report.	Within 5-10 years, create the State of the Bay Report	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration

Action Item	Activities	Timeframe and Output(s)	Implementation Cost	Funding Source(s)
	Evaluate the need to update GBP'18.	Within 5-10 years, review Galveston Bay indicators data and determine if new information indicates the need for any updates to GBP'18.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Evaluate the need to revise GBP'18.	Within 10-plus years, review Galveston Bay indicators data and determine if new information indicates the need for any revisions to GBP'18.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
ACS-2 Provide Access to Monitoring and Research Data	Continue the State of the Bay Symposia.	Within 2-5 years, host a State of the Bay Symposium.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Collect data and create a data and mapping research hub (database).	Within 2-5 years, collect research data and use it to create a data and mapping research hub (database).	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Support the development of white papers, technical presentations, and workshops.	Within 2-5 years, provide support on the development of white papers, technical presentations, and workshops (number TBD).	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Create the State of the Bay Report.	Within 5-10 years, use research data to create the State of the Bay Report.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Evaluate the need to update GBP'18.	Within 5-10 years, review new monitoring and research data and determine if new information indicates the need for any updates to GBP'18.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Create a research synthesis report.	Within 10-plus years, use research data to create a research synthesis report, an annotated bibliography of	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration

Action Item	Activities	Timeframe and Output(s)	Implementation Cost	Funding Source(s)
		new research on Galveston Bay.		
	Evaluate the need to revise GBP'18.	Within 10-plus years, review new monitoring and research data and determine if new information indicates the need for revisions to GBP'18.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
ACS-3 Track Galveston Bay Plan Implementation	Establish an implementation-tracking system.	Within 2-5 years, create tracking system in coordination with stakeholders	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Share results at State of the Bay Symposia.	Within 5-10 years share results.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Incorporate results into the State of the Bay Report.	On a cycle of every 5-10 years, use implementation data to create the State of the Bay Report.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Assess the need for updating GBP'18.	Within 5-10 years, evaluate the need to update, then if needed, update GBP'18.	\$0 - \$200,000	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration
	Assess the need for revising GBP'18.	Within 10-plus years, evaluate the need to revise, then if needed, revise GBP'18.	\$200,000 - \$1 Million	CWA Section 320, TCEQ state funding, in-kind staff time from partners in collaboration